AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) A coating dry estimating method of estimating a dry state of coating on a coating target, comprising:

~~a first step of~~ calculating temperature data indicating a transition of a temperature distribution of the coating target with a time lapse;

~~a second step of~~ calculating an integrated value of an amount of heat applied to the coating on a ~~the~~ basis of the temperature data; and

~~a third step of~~ estimating ~~the~~ a dry state of the coating on a ~~the~~ basis of the integrated value of the amount of heat.

Claim 2. (Currently amended) The coating dry estimating method according to claim 1, wherein said estimating comprises ~~the third step contains a step of~~ comparing the integrated value of the amount of heat applied to the coating with a threshold value ~~for judging dry of the coating~~ to estimate the dry state of the coating.

Claim 3. (Currently amended) The coating dry estimating method according to claim 2, wherein said calculating an integrated value of an amount of heat comprises:

~~the second step is a step of~~ determining a time period for which the temperature of the coating target is within a predetermined temperature range in the temperature data;~~,~~ and

calculating the integrated value of the amount of heat applied to the coating within the time period.

Claim 4. (Currently amended) The coating dry estimating method according to claim 3,

wherein said calculating an integrated value of an amount of heat comprises ~~the second step contains a step of~~ correcting the integrated value of the amount of heat on a ~~the~~ basis of at least one of a ~~the~~ film thickness of the coating, a ~~the~~ kind of coating material used for the coating, and a ~~the~~ content of solvent contained in the coating.

Claim 5. (Currently amended) The coating dry estimating method according to claim 1, wherein said calculating temperature data comprises:

~~the first step contains a step of superposing~~ superimposing a coating target mesh achieved by representing the coating target in a ~~the~~ form of a mesh on an in-furnace area mesh achieved by modeling a dry furnace; ~~and~~

representing the dry furnace in the form of a mesh while moving the coating target mesh in conformity with a movement pattern representing a movement locus of the coating target, thereby generating superimposed ~~superposed~~ grids time-sequentially, and

~~a step of~~ analyzing the temperature distribution of the coating target by using each of the superimposed ~~superposed~~ grids generated time-sequentially.

Claim 6. (Currently amended) The coating dry estimating method according to claim 5, wherein the coating target mesh comprises a fine mesh achieved by representing an ~~the~~ internal structure of a member at a note site to be noted for analysis in the form of a mesh, and a rough mesh achieved by representing a ~~the~~ surface of the coating target at portions other than the note site in the form of a mesh.

Claim 7. (Currently amended) The coating dry estimating method according to claim 2,

wherein said calculating temperature data comprises:

~~the first step contains a step of superposing~~ superimposing a coating target mesh achieved by representing the coating target in a ~~the~~ form of a mesh on an in-furnace area mesh achieved by modeling a dry furnace; ~~and~~

representing the dry furnace in the form of a mesh while moving the coating target mesh in conformity with a movement pattern representing a movement locus of the coating target, thereby generating superimposed ~~superposed~~ grids time-sequentially;; and

~~a step of~~ analyzing the temperature distribution of the coating target by using each of the superimposed ~~superposed~~ grids generated time-sequentially.

Claim 8. (Currently amended) The coating dry estimating method according to claim 7, wherein the coating target mesh comprises a fine mesh achieved by representing an ~~the~~ internal structure of a member at a note site to be noted for analysis in the form of a mesh, and a rough mesh achieved by representing the surface of the coating target at portions other than the note site in the form of a mesh.

Claim 9. (Currently amended) The coating dry estimating method according to claim 3, wherein said calculating temperature data comprises:

~~the first step contains a step of superposing~~ superimposing a coating target mesh achieved by representing the coating target in a ~~the~~ form of a mesh on an in-furnace area mesh achieved by modeling a dry furnace; ~~and~~

representing the dry furnace in the form of a mesh while moving the coating target mesh in conformity with a movement pattern representing a movement locus of the coating

target, thereby generating superimposed ~~superposed~~ grids time-sequentially;~~,~~ and

~~a step of~~ analyzing the temperature distribution of the coating target by using each of the superimposed ~~superposed~~ grids generated time-sequentially.

Claim 10. (Currently amended) The coating dry estimating method according to claim 9, wherein the coating target mesh comprises a fine mesh achieved by representing an ~~the~~ internal structure of a member at a note site to be noted for analysis in the form of a mesh, and a rough mesh achieved by representing a ~~the~~ surface of the coating target at portions other than the note site in the form of a mesh.

Claim 11. (Currently amended) The coating dry estimating method according to claim 4, wherein said calculating temperature data comprises:

~~the first step contains a step of superposing~~ superimposing a coating target mesh achieved by representing the coating target in a ~~the~~ form of a mesh on an in-furnace area mesh achieved by modeling a dry furnace; ~~and~~

representing the dry furnace in the form of a mesh while moving the coating target mesh in conformity with a movement pattern representing a movement locus of the coating target, thereby generating superimposed ~~superposed~~ grids time-sequentially;~~,~~ and

~~a step of~~ analyzing the temperature distribution of the coating target by using each of the superimposed ~~superposed~~ grids generated time-sequentially.

Claim 12. (Currently amended) The coating dry estimating method according to claim 11, wherein the coating target mesh comprises a fine mesh achieved by representing an ~~the~~

internal structure of a member at a note site to be noted for analysis in the form of a mesh, and a rough mesh achieved by representing a ~~the~~ surface of the coating target at portions other than the note site in the form of a mesh.

Claim 13. (Currently amended) A recording medium recorded with a program for making a computer execute a coating dry estimating method of estimating a dry state of coating on a coated coating target, comprising:

~~a first step of~~ calculating temperature data indicating a transition of a temperature distribution of the coating target with time lapse;

~~a second step of~~ calculating an integrated value of an amount of heat applied to the coating on a ~~the~~ basis of the temperature data; and

~~a third step of~~ estimating a ~~the~~ dry state of the coating on a ~~the~~ basis of the integrated value of the amount of heat.

Claim 14. (Currently amended) A coating dry estimating system for estimating a dry state of coating on a coated coating target, comprising:

a storage device for storing a threshold value for judgment of a dry state of the coating; and

a computer for calculating temperature data representing a transition of a temperature distribution of the coating target with time lapse, calculating an integrated value of the amount of heat applied to the coating on a ~~the~~ basis of the temperature data, and comparing the integrated value of the amount of heat applied to the coating with the threshold value to estimate a ~~the~~ dry state of the coating.

Claim 15. (Original) The coating dry estimating system according to claim 14, wherein the computer calculates a time period for which the temperature of the coating target is within a predetermined temperature range in the temperature data, and calculating an integrated value of the amount of heat applied to the coating within the time period.

Claim 16. (Currently amended) The coating dry estimating system according to claim 14, wherein the computer corrects the integrated value of the amount of heat on a ~~the~~ basis of at least one of a ~~the~~ film thickness of the coating, a ~~the~~ kind of coating material used for the coating, and a ~~the~~ content of solvent contained in the coating.

Claim 17. (New) The method of claim 5, wherein said calculating temperature data comprises superimposing a coating target mesh on an in-furnace mesh.

Claim 18. (New) The method of claim 17, wherein said calculating temperature data further comprises moving the coating target mesh relative to the in-furnace mesh.

Claim 19. (New) The method of claim 18, wherein said calculating temperature data further comprises analyzing the temperature distribution of the coating target.

Claim 20. (New) The method of claim 1, wherein said calculating an integrated value of an amount of heat applied to the coating comprises:

correcting the temperature distribution of the coating target based upon at least one of a thickness of the coating, a characteristic of a material in the coating, and a content of

solvent in the coating to provide a corrected temperature data for the coating; and

integrating the corrected temperature data for the coating over time to provide the integrated value of the amount of heat applied to the coating.